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PRIOR PAPERS ON THIS SUBJECT: NO (YES)

PRIOR CORRES SENT TO:

OTHER COMMENTS: Doc was ltr/c
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EXECUTIVE REGISTRY FILE NO: L-255-1R

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20 MAY 1988

MEMORANDUM FOR: Deputy Director for Intelligence

FROM: Douglas J. MacEachin, Director of Soviet Analysis

SUBJECT: Response to Request From Presidential Science Advisor

1. Attached is a memorandum prepared by analysts in this office, with contributions from the Office of Scientific and Weapons Research and the Office of Leadership Analysis, in response to a request from Dr. Graham for our assessment of the role of Soviet scientists in arms control policymaking under Gorbachev.

2. Also attached is a cover memorandum for the Executive Secretary to use in forwarding the memorandum to Dr. Graham's office.

STAT

Douglas J. MacEachin

Attachments:
A. Memo from analysts
B. Memo for Exec. Sec.

This memorandum is UNCLASSIFIED when seperated from attachments.

25X1

SECRET

L-255-15

SUBJECT: Response to request from Presidential Science Advisor

DI/SOVA/ [redacted] /19 May 1988 STAT

Distribution:
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ER 1804/1 88

Central Intelligence Agency

Washington, D.C. 20505

20 May 1988

MEMORANDUM FOR: Jonathan F. Thompson
Executive Director
Office of Science and Technology Policy
Executive Office of the President

SUBJECT: The Role of Science and Scientists
Under Gorbachev

1. In response to the questions raised in your memorandum, based upon Dr. Graham's conversations in Moscow, analysts in the Directorate of Intelligence have prepared the attached assessment of the role of Soviet scientists in arms control policymaking under Gorbachev and Soviet motives in pursuing cooperative scientific ventures. [redacted] 25X1

2. Our analysts were very interested in Dr. Graham's reports on his conversations and would welcome any additional light he may be able to shed on these issues in the future. Please advise us if we may be of further help. [redacted] 25X1

25X1

[redacted]
Executive Secretary

Attachment

SECRET

[redacted] 25X1

25X1

ATTACHMENT

SOVIET SCIENCE AND SCIENTISTS UNDER GORBACHEV

Summary

Soviet scientists have become increasingly visible and influential during the 1980s as Soviet leaders have sought expert advice on problems requiring the application of advanced technologies. For example, restructuring of the Soviet economy requires the introduction of modern industrial methods and machinery; modernization of the Soviet arsenal calls for advanced technologies such as precision guidance, power supplies and directed energy; and the civilian space program requires increasingly high levels of expertise as its programs and missions become more sophisticated.

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The need for expert advice also has grown in the area of arms control, as negotiations have focused more on technical issues, such as constraining strategic defenses and monitoring treaties that would limit nuclear testing and strategic offensive weapons.

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Soviet scientists also play a key role in Moscow's efforts to foster cooperative scientific projects such as the proposed Mars exploration missions and the international nuclear fusion reactor project. These projects are pursued in part to increase Soviet prestige by fostering a cooperative image of the USSR and by highlighting a successful high technology program. They also are designed to reduce costs, maximize scientific expertise and improve the efficiency of Soviet projects, while raising the general level of Soviet scientific capabilities through expanded access to Western technology.

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Science and Scientists Under Gorbachev

General Secretary Gorbachev believes science and technology are the key to the USSR's ability to meet the formidable challenges of the 1990s--modernizing the economy, revitalizing society, and competing more effectively with the West. Because of the increased importance of scientific and technical issues, the leadership is seeking the opinions and advice of the scientific community to a far greater degree than in the past. For example,

Gorbachev has expanded his group of advisors on the space program to 30-50 individuals, where previous leaders had two or three.

is a key advisor to Gorbachev on science, strategic defense, and international space cooperation projects. He was particularly prominent during the Halley's Comet encounter, and he played a significant role in negotiating the space cooperation agreement and various individual projects at the Geneva, Reykjavik and Washington summits. Yevgeniy Velikhov, Vice President of the Soviet Academy of Sciences, also participated in the summit meetings and has advised Gorbachev on arms control, computerization, and nuclear technology issues. He is directing efforts in response to the Chernobyl accident and leads Soviet participation in the international project to design a nuclear fusion reactor. He also has participated actively in the effort to design acceptable monitoring procedures for agreements that would limit nuclear testing.

Role in Arms Control

The need for scientific advice in developing Soviet arms control policy has grown as negotiations have focused increasingly on technical issues, such as strategic defenses and ways of monitoring limits on nuclear testing and strategic offensive arms. Soviet scientists generally participate at the working-group level, providing negotiators with advice on technical issues.

Some scientists also may be starting to compete informally with the traditional role of the Ministry of Foreign Affairs, the International Department of the Central Committee, and the Ministry of Defense in generating some policy options, although their influence in policy formulation is still limited.

Soviet handling of scientific advice about monitoring sea-launched cruise missiles (SLCMs) may reflect this feuding between scientists and bureaucrats. Papers published by Soviet scientists on the use of remote-sensing devices for monitoring SLCM limits have been candid about the inadequacy of such devices for monitoring SLCM deployments, but Gorbachev was not properly informed of these inadequacies. Exaggerated claims about Soviet capabilities to monitor SLCM limits also could have originated in the Soviet arms control bureaucracy as a means of reinforcing Soviet arguments at the Geneva talks for strict limits on, and monitoring of, SLCMs.

Members of the USSR Academy of Sciences also have played a role in the arms control process through their discussions with US scientists under the auspices of the Committee on International Security and Arms Control of the National Academy of Sciences and in other forums. In recent years, these discussions have centered on intermediate-range and strategic nuclear forces and Soviet proposals for limiting the US Strategic Defense Initiative. Views expressed by Soviet scientists, particularly Sagdeyev and Velikhov, occasionally have foreshadowed future Soviet negotiating or propaganda positions. Reporting from these meetings has provided advance notice of Soviet proposals later tabled in Geneva.

Soviet scientists also have used their contacts with Western counterparts to support Moscow's campaign against SDI. Unlike the neutron bomb and INF issues, where the Soviets promoted mass demonstrations and pressure tactics, Moscow's approach to the anti-SDI campaign appears to reflect the judgment that the issue is too technical and its impact too remote to evoke a response from lay audiences. Instead, Soviet scientists have spearheaded the campaign by arguing Moscow's case at a sophisticated level to influential Western academicians.

Promoting Cooperative Projects

In recent years, Soviet scientists also have become more prominent internationally because of increased Soviet interest in promoting cooperative science projects, such as the bilateral nuclear fusion agreement, international nuclear fusion reactor project and Mars exploration missions. The Soviets have several goals in seeking such projects beyond their immediate practical results. Moscow hopes that increased participation in international scientific ventures will foster a less threatening image of the USSR, and that bilateral projects with the United States will help expand and stabilize the US-Soviet relationship. The Soviets also hope that increased contacts with Western scientists will bring the USSR into the international scientific mainstream and help raise Soviet science to world standards.

Increased Soviet interest in cooperative scientific ventures has focused particularly on space-related projects, where Moscow has achieved a respectable capability. A Soviet pamphlet on international cooperation in space research states that Moscow sees such cooperation as offering an opportunity to improve the efficiency of its space research and to reduce Soviet costs for conducting experiments. Soviet scientists, notably Sagdeyev, have complained that as a result of budget problems, limited resources for fundamental scientific research and exploration in space have been reduced further to benefit some "favorite" projects, such as the Soviet shuttle program.

Moscow also values the access to US resources such agreements provide. Soviet interest in cooperation related to the laser experiment for the Phobos mission is an example of Moscow's efforts to use bilateral cooperation to solve a problem with an experiment. Access to the US thermal-vacuum chamber in Houston would allow the Soviets to calibrate the laser prior to launch. Although the Soviets can use the laser during the Phobos mission without such calibration, the data will be less precise. Similarly, US space-tracking sites, previously used during the Halley's Comet encounter, could further improve the accuracy of Soviet measurements from Phobos. The international nuclear fusion project is another example of the Soviet scientific community's effort to preserve a cooperative arrangement that reduces the costs of a very expensive and long-term program that would take even longer if it were under Soviet sponsorship alone.

Impact of Glasnost on Scientific Debate

As a result of Gorbachev's reliance on the scientific community for support and ideas in pressing his overall program of restructuring and change, Soviet scientists are enjoying a greater sense of prestige and are displaying a greater interest in policy issues. Indeed, some are taking advantage of the liberalized atmosphere resulting from glasnost to state their positions openly on a variety of issues, and we expect more scientists to speak out on foreign policy questions.

Although the scientists probably will continue to become more outspoken, we see no indication that they are a potential source of organized opposition to official policy. Indeed, changes directed at increasing competition and spurring new ideas also have resulted in increased feuding among the institutes over priorities and funding. Moreover, the most outspoken and influential scientists, like Sagdeyev and Velikhov, are themselves part of the establishment and unlikely to become spokesmen for dissent.